DMB HK Limited
Doing Major Business







BC / PD SERIES INTRODUCTION

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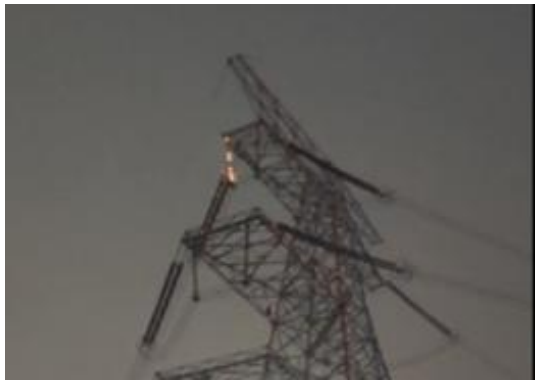
Hazards caused by corona









-Produce an ion impact effect and accelerate the destruction of the material of electric equipment.

- Ozone, nitrogen oxides, and nitric acid are produced; these chemical substances accelerate the ageing of the insulation and oxidize the surface of the copper metal to affect the conductivity of the contact surface.

- Corona discharge causes ageing and failure of insulating oil.

- Cause radio, television and radio frequency interference, affecting communication or viewing.

- Consumes electrical energy; reduces power transmission efficiency.

- Corona discharge is often the first sign of severe flashover phenomena.

- Causes generator set failure.

- In severe cases, serious accidents such as tripping, fire, explosion, etc., are caused, and heavy losses are caused.

Application Value

Corona detection method of ultraviolet imager

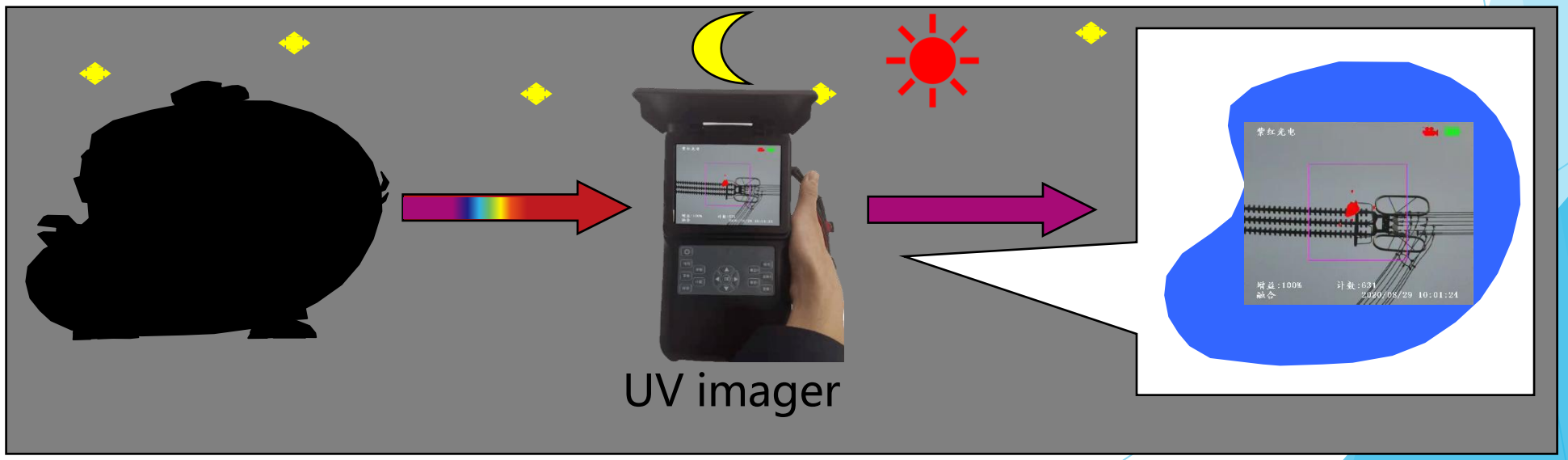
“Positioning” needle accurately locates the discharge position.
“Qualitative” corona is like a tumour, which needs to be judged and tracked.
“Quantitative” gives the photon count value to estimate the corona intensity.

The Importance of Using a UV Imager

“Inspect” for early warning of potential defects (corona or fever, pre-maintenance inspection).
“Diagnosis” evaluates important power equipment's operating health status and estimated service life.
“Save” Save money by avoiding costly unplanned outages and breakdowns.
“Judging” evaluates the effect of installation, maintenance (cleaning), and repair.

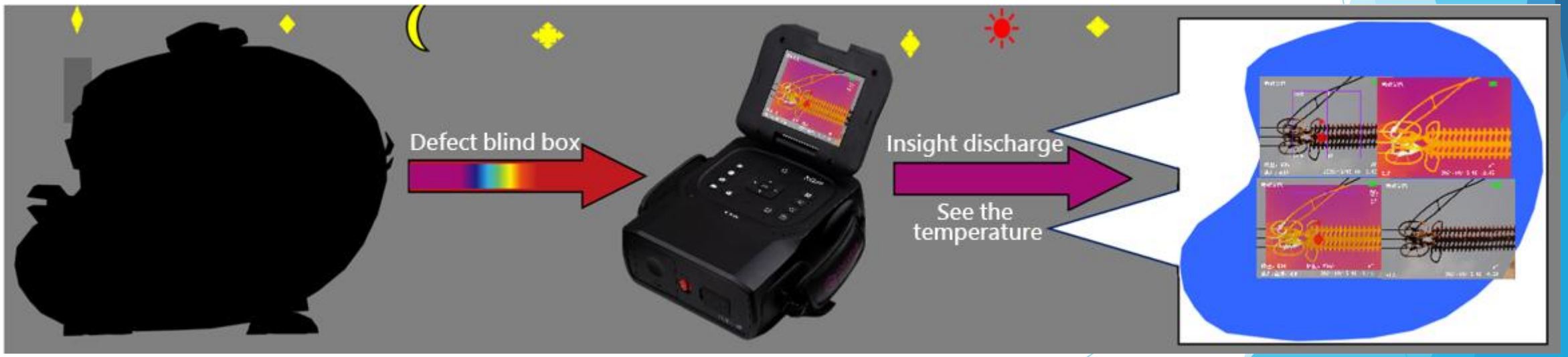
What is a UV Imager technology?

The UV imager splits visible light and ultraviolet light through a set of optical systems, obtains the background image through the visible light channel, detects ultraviolet photons through an ultraviolet detector (ultraviolet photosensitive element) and converts them into electrical signals, which are invisible to the naked eye. The corona is transformed into an optical image visible to the human eye, which generates a fused visible-UV image on the display.



What is multi-light imaging technology?

Multi-light imaging technology is an emerging multi-spectral joint diagnostic technology based on ultraviolet, infrared, and visible light imaging. One machine is multi-functional, and multiple methods complement and assist each other. It can not only improve diagnostic accuracy and detection efficiency but also reduce False alarm rates and missed alarm rates. It can combine laser ranging and artificial intelligence technology to realise multi-spectral joint intelligence diagnosis.



BC-10

Corona Camera

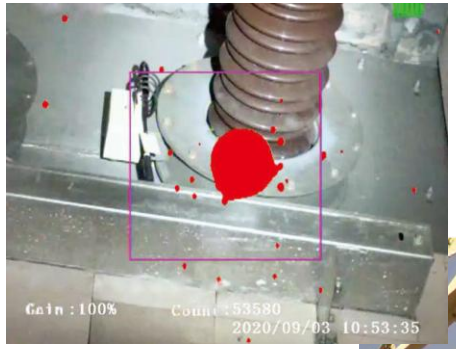
Overview

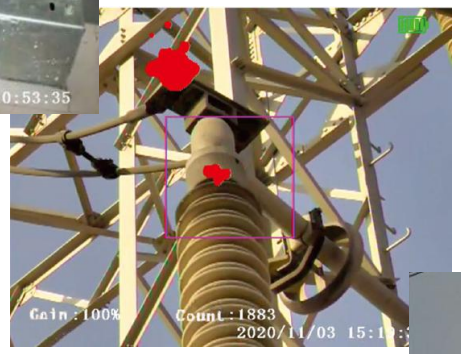
- Daytime filter, not affected by sunshine
- Power, serial and video all-in-one plug-in port
- Low power consumption, Light Weight
- Counting of UV photons of the corona, Adjustable UV gains
- Output video with no delay or trailing
- SDK provided, RS232 communication
- Wide working temperature from -25°C to 55°C
- Enclosed design for a harsh environment

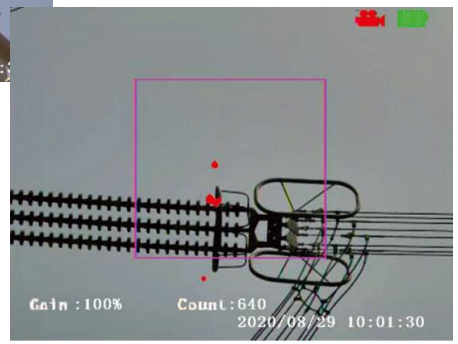


BC-20

UV Handheld Corona Camera







High Sensitivity Detector

A high-performance, no-attenuation UV detector is powerful for weak UV signals generated from discharge corona.

Accurate Positioning

A precision image fusion algorithm can accurately locate the corona position; the overlay accuracy is 0.5mrad.

High-performance Filter

High precision 240-280nm cutoff wavelength UV filter has excellent out-of-band rejection performance and will not interfere with sunlight.



Overview

- High Sensitivity UV Signal Detector
- Accurate Photon Counting
- Ergonomic Design
- Expert Diagnostics

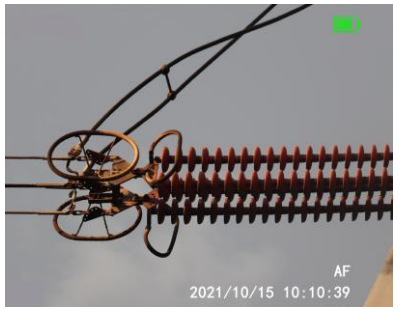
BC-30

Multi-Spectral (UV+IR+VI) Cameras

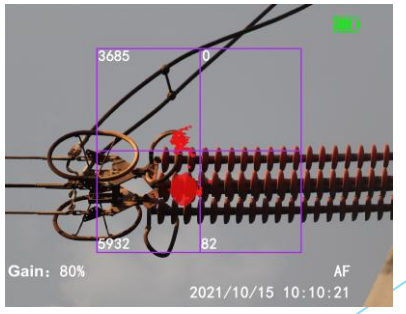


Overview

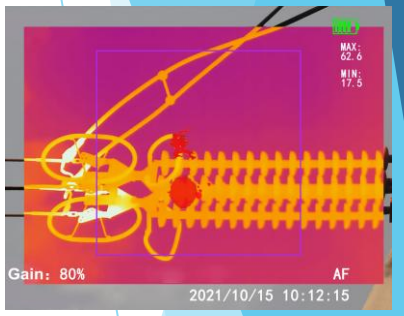
- No tailing, pinpointing for precise positioning
- Photons counting for quantitative analysis
- Daytime and night application
- Adjustable UV gain from 0-100%
- High Overlay Accuracy
- UV, IR & Visible Camera
- Closed enclosure, low heat, continuous stable operation
- 5 inch Large deluxe reflective 640*480 pixels LCD



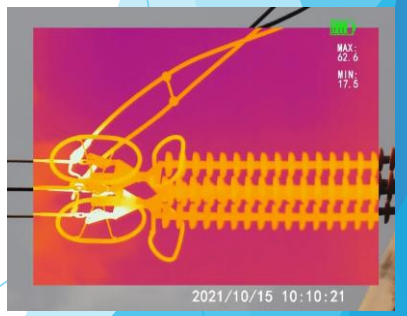
VIS



UV-VIS Combined



IR-VIS Combined



UV-IR-VIS Combined

BC-20 OS (Onsite)

Online Corona Detection Camera



FEATURES

- High-sensitivity UV detector
- Daytime usable, unaffected by sunlight
- Accurate image fusion algorithm
- Onsite design of communication and control
- Accurate positioning
- Central control, remote signal transmission
- High-resolution visible camera
- Powerful background analysis and diagnosis
- 360° rotating high-precision pan-tilt
- Integrated design for monitoring
- Industrialized design, durable, stable
- Early warning
- Multi-screen for real-time monitoring
- Lightning protection, interference prevention
- Set the preposition for patrol inspection
- Grounding measures
- Unattended humanised control panel
- Accept customisation
- Multi-parameter control and setting Accurate
- No attenuation detector
- UV photon counting
- Digital image filtering and noise reduction

BC-30 OS (Onsite)

Multi-spectrum; UV, IR & VIS



FEATURES

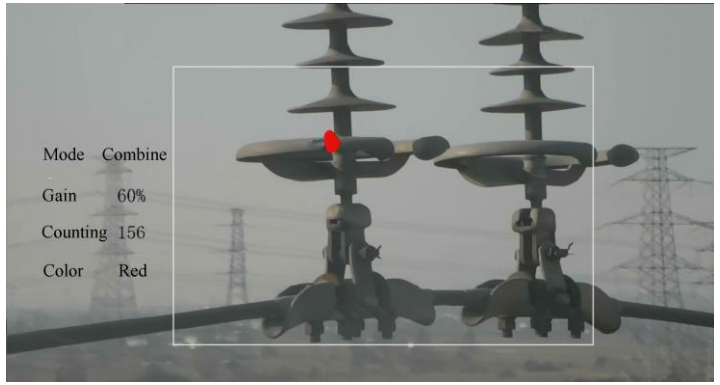
- Online UV imager module, UV + visible fusion zoom
- Real-time monitoring of the system, split screen, multi-interface control and display
- UV photon number, infrared temperature abnormal automatic alarm, capture
- 1280x720 pixel ultraviolet fusion imaging high-definition digital video stream
- 640x480 pixel infrared autofocus, point, line, frame temperature measurement
- Integrative modular SDK development kit, rich Demo programs

BC-20 DR (Drone)

Combined Corona & VIS Detection Imaging System for Drone Remotely Solution

Overview

- PTZ systems adapt to a variety of UAVs
- Automatic focus, easy to observe and detect
- Multi R.O.I. for photon counting
- Real-time HD digital signal data stream
- Flexible flight, remote control & Transmission
- Dule F.O.V. switchable by one button
- Gain adjustable from 0% to 100%
- Alarm threshold to quickly diagnose photon





BC-30 DR Jr

Compact Drone Carrier Multi-Spectral Camera on Corona Detection



Overview

- Standard Pan-Tilt and excellent shock-resistance
- High integration of UV, IR, VIS and Laser
- Individual Operation Quality and Efficiency
- 4-in-1 Multi-spectral joint diagnosis
- Secured equipment and good after-sale service



BC-30 ROB (Robotic)

Substation UV+IR+VIS Inspection Automation

Overview

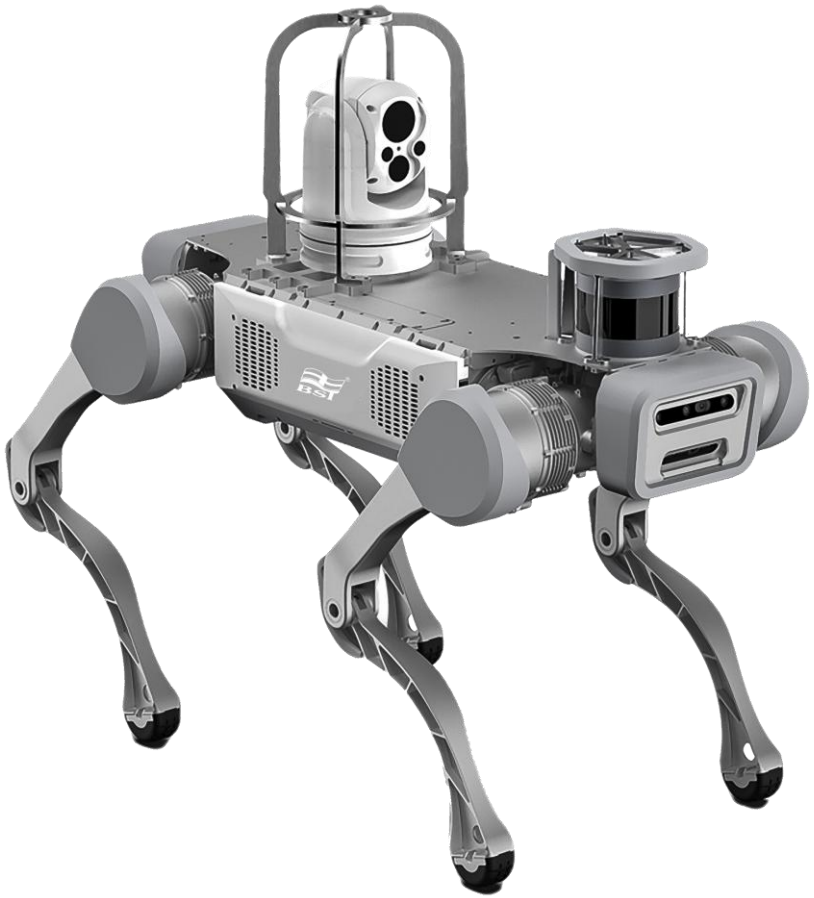
- Real-time photon counting of corona for quantitative analysis
- Out-of-band rejection filter technology, not affected by sunlight
- IP 55 protection, high sensitivity dynamic obstacle avoidance ability
- IR temperature measurement with high precision and a wide range
- One-stop intelligent inspection management platform
- Multi-spectral image auto-focusing and taking photos to facilitate real-time observation
- Powerful 8- drive chassis facilitates multi-directional driving
- Using a 2.4GHZ high-frequency radio communication range
- Multi-spectral synchronization, no delay and tailing, accurate positioning of corona
- Endurance time is more than eight hours, meeting the demand of daytime operation
- PC, remote control, manual and automatic integrated control, humanized design
- Stable working temperature from -20°C ~ +60°C
- High-precision LIDAR navigation to accurately locate the driving route
- Customized to specific applications





BC-30 AIBO (Robotic)

Substation UV+IR+VIS Inspection Automation



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BC-20 DR (Drone)

Demonstrate





BC-20 DR (Drone)

Demonstrate

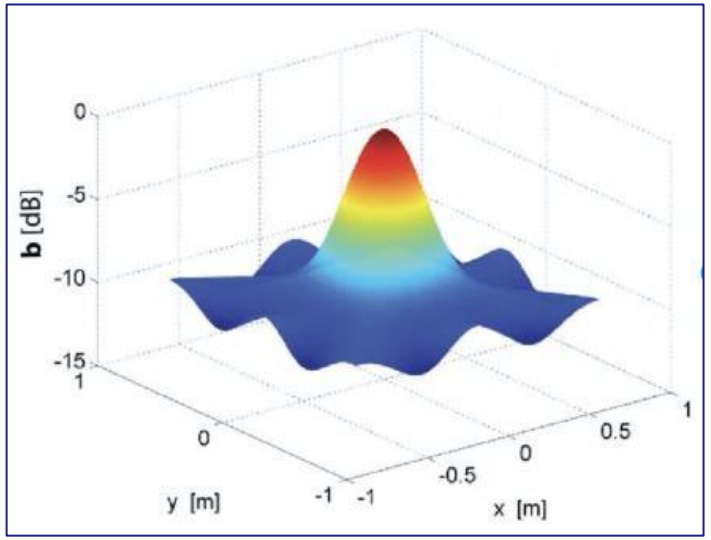




What is Acoustic Imaging?



MIC Array Technology



Beam-forming sound source localization technology

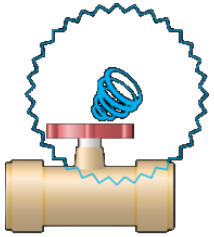


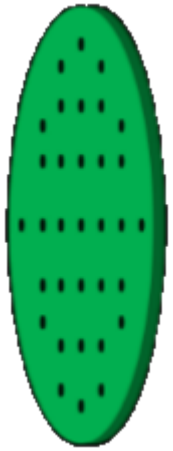
Acoustic imaging is based on microphone array measurement technology, through the measurement of sound waves in a specific space to reach the microphone signal phase difference, based on the phased array principle to determine the location of the sound source, measure the amplitude of the sound source, and display the distribution of the sound source in the space in the form of an image of the technology.

How an acoustic imager works

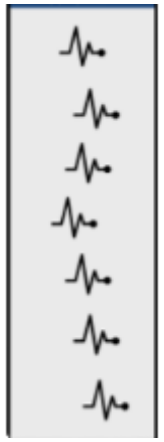
IMAGER DATA PROCESSING FLOW



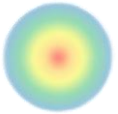




Array Signal



Sonogram



video streaming

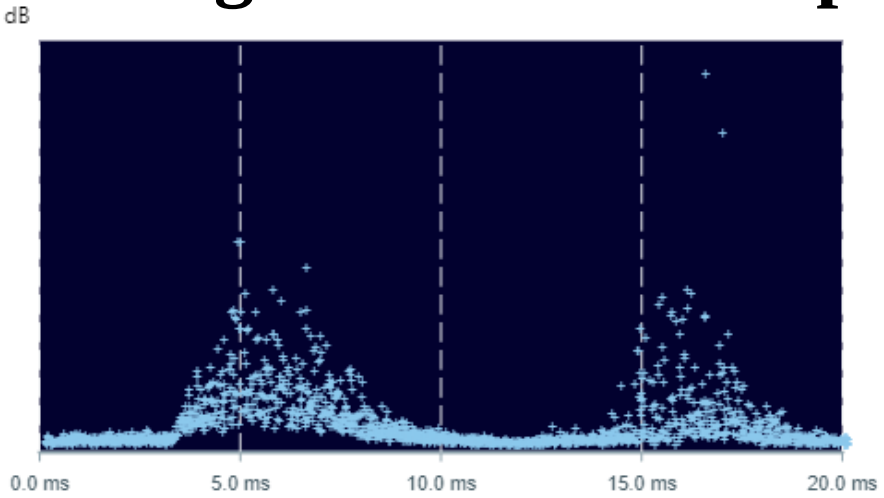


Sound and image cloud image

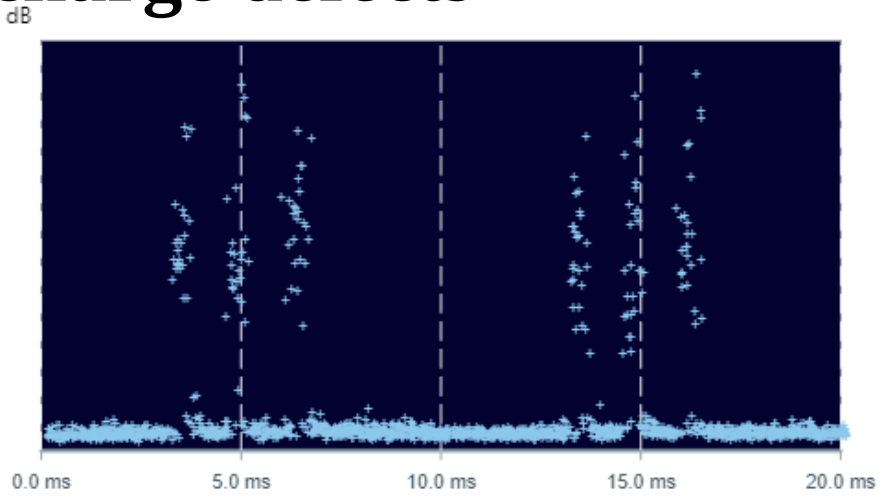


1. The fault point emits ultrasonic waves and radiates around.
2. The microphone array collects acoustic signals, including sound source location information.
3. The software performs various operations on sound waves to obtain sound images.
4. The audio and video image is superimposed on the video image to generate an audio and video cloud image.

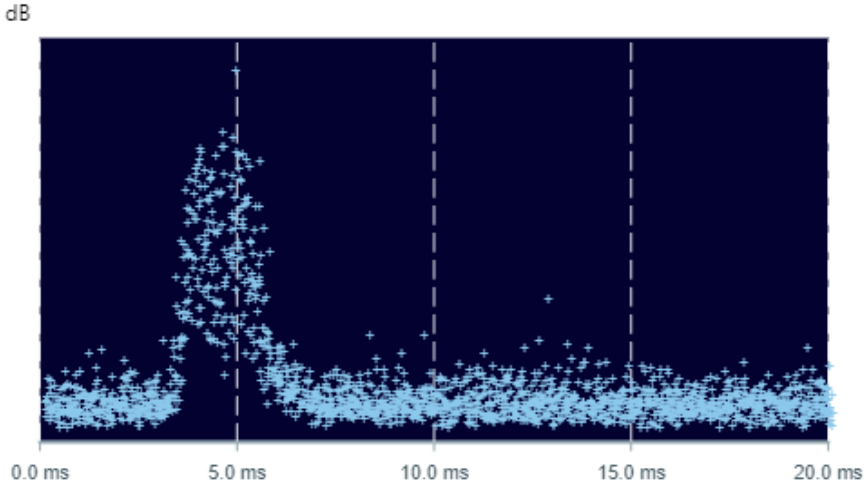
PRPD diagram of common partial discharge defects



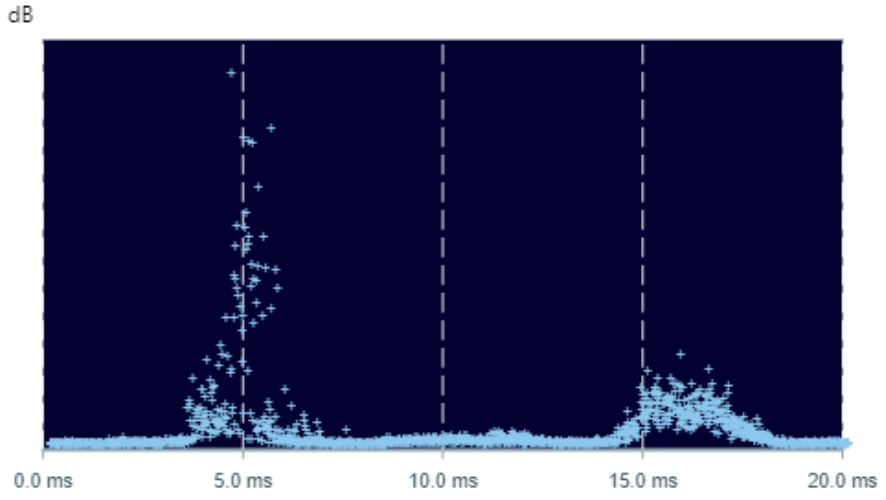
Insulation type discharge
(Surface/Internal discharge)



Suspension discharge

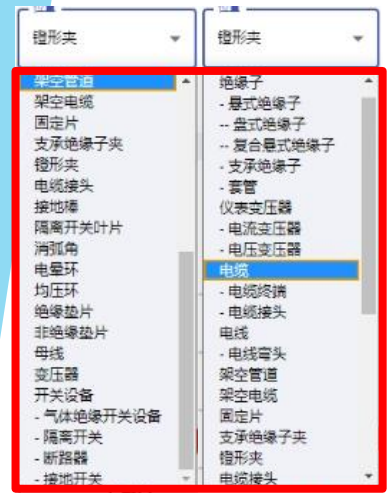


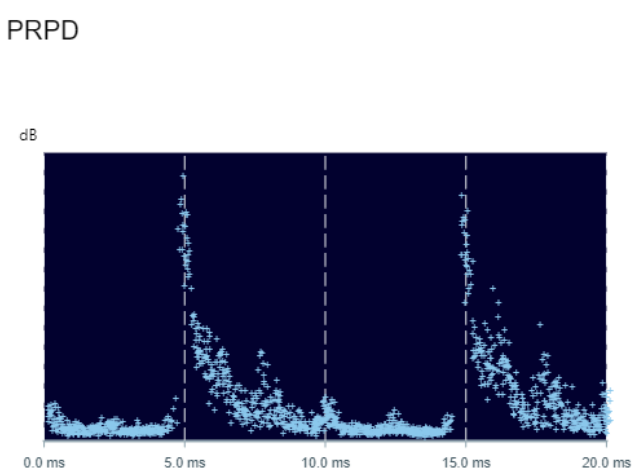
Corona discharge pattern diagram



High intensity corona discharge pattern diagram

Defect analysis and severity assessment





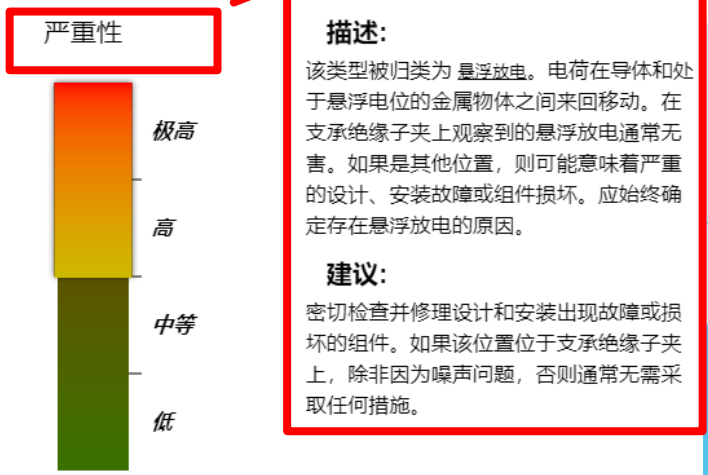
Defect discharge type



Distance



Voltage level



The final defect analysis needs to be combined with multiple factors such as "discharge type", "defect distance", "voltage level", "defect location", etc., to draw corresponding conclusions.

PD10 OS

Online Partial Discharge Monitoring Module



PD10 OS Advantages of the integrated monitoring module

- Efficient: 50.5° F.O.V., 25FPS, flexible installation methods, continuous tracking and monitoring.
- Straight: High-precision algorithm accurately locates PD, generates real-time image feedback data to the background display, and intuitively displays the PD point.
- Intelligent: Offline identification of PD, real-time display of PRPD spectrum, and intelligent diagnosis of PD fault types during the inspection.
- Noise Resistance: Dual protection quickly deals with noise interference and enables the detection of tiny localised discharges.



- High Adaptability: It has a universal communication protocol with flexible docking of most data backgrounds to achieve seamless data connection.
- Quality Service: We provide a 2-year warranty, after-sales service, quality spare parts and a professional team to provide online training and consultation support.

Features

- Lightweight design: The whole set of modules weighs only 1100g.
- It can be fixed or mobile installed.
- Free gimbal + split module to realize 360° free detection.
- 2KHz ~ 65KHz, automatic adjustment of the detection band according to the scenario.
- It provides a Real-time presentation of time-domain features and PRPD spectrum.
- It enables rapid multi-target inspection and improves detection efficiency.

PD20

Acoustic Imaging Camera for Partial Discharge on Power Systems



Features

- 128 MEMS microphones
- Locating defects (electrical, vibration, leakage)
- One-handed operation for flexibility
- 8 megapixel HD camera clearly shows defects
- Real-time display of the discharge level on-screen
- Automatic determination of the type and severity of PD according to the tested equipment
- Testing frequencies from 2KHz ~ 65KHz
- Testing range from 0.3m ~ 100m
- Photos and videos for recording abnormal spots



PD20 Ex

Acoustic Imaging Camera for Partial Discharge on Chemical Industry

Features

- 128 MEMS microphones
- Gas leak localisation, vibration localisation
- More flexible single-handed operation
- 2X zoom function, see more clearly the detection of abnormal areas
- Display real-time gas leak positions and abnormal vibration positions
- Intelligent software automatically determines leak intensity and vibration intensity based on device type
- 2KHz to 65KHz test frequency covers sound signals and ultrasonic signals
- 0.3m ~ 100m test range meets various sites
- With Photo and video functions, record abnormal points at any time



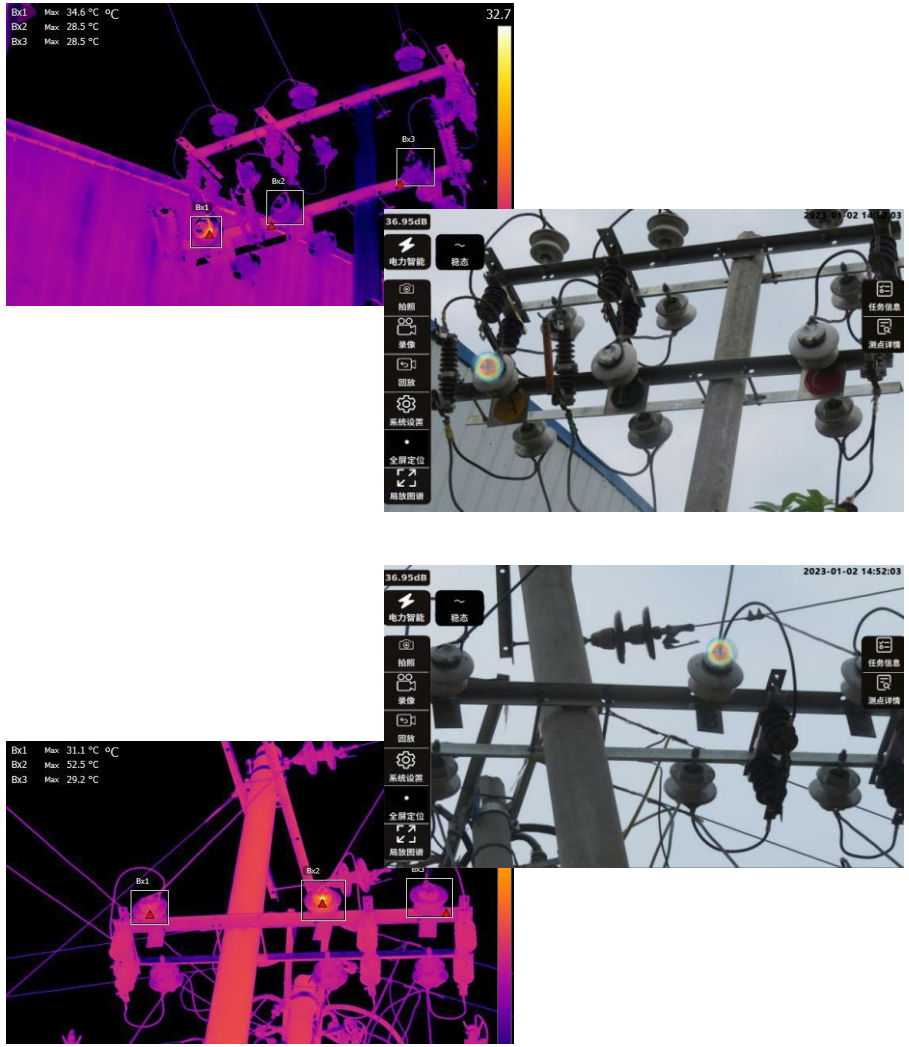






PD20 IR

Acoustic & Infrared Fusion Imaging Camera







Features

- 128 MEMS microphones
- 384 x 288 infrared camera
- Locating defects in electrical equipment (electrical, vibration, leakage, infrared)
- One-handed operation for flexibility
- Integrated design for portability and flexibility of use
- 8 megapixel HD camera clearly shows defects
- Testing frequencies from 2KHz ~ 65KHz
- Testing range from 0.3m ~ 100m

PD30 DR (Drone)

Drone Solution Partial Discharge Acoustic Camera





Features

- Lightweight design weighs only 980g
- One of a few acoustic cameras to carry on drones:
- Metal material + unique noise reduction algorithm to reduce the noise
- Full coverage of 2KHz ~ 65KHz, automatic adjustment of detection frequency band
- Time domain features and PRPD spectral of PD displayed in real-time on the remote control
- Rapid multi-target scanning and high detection efficiency



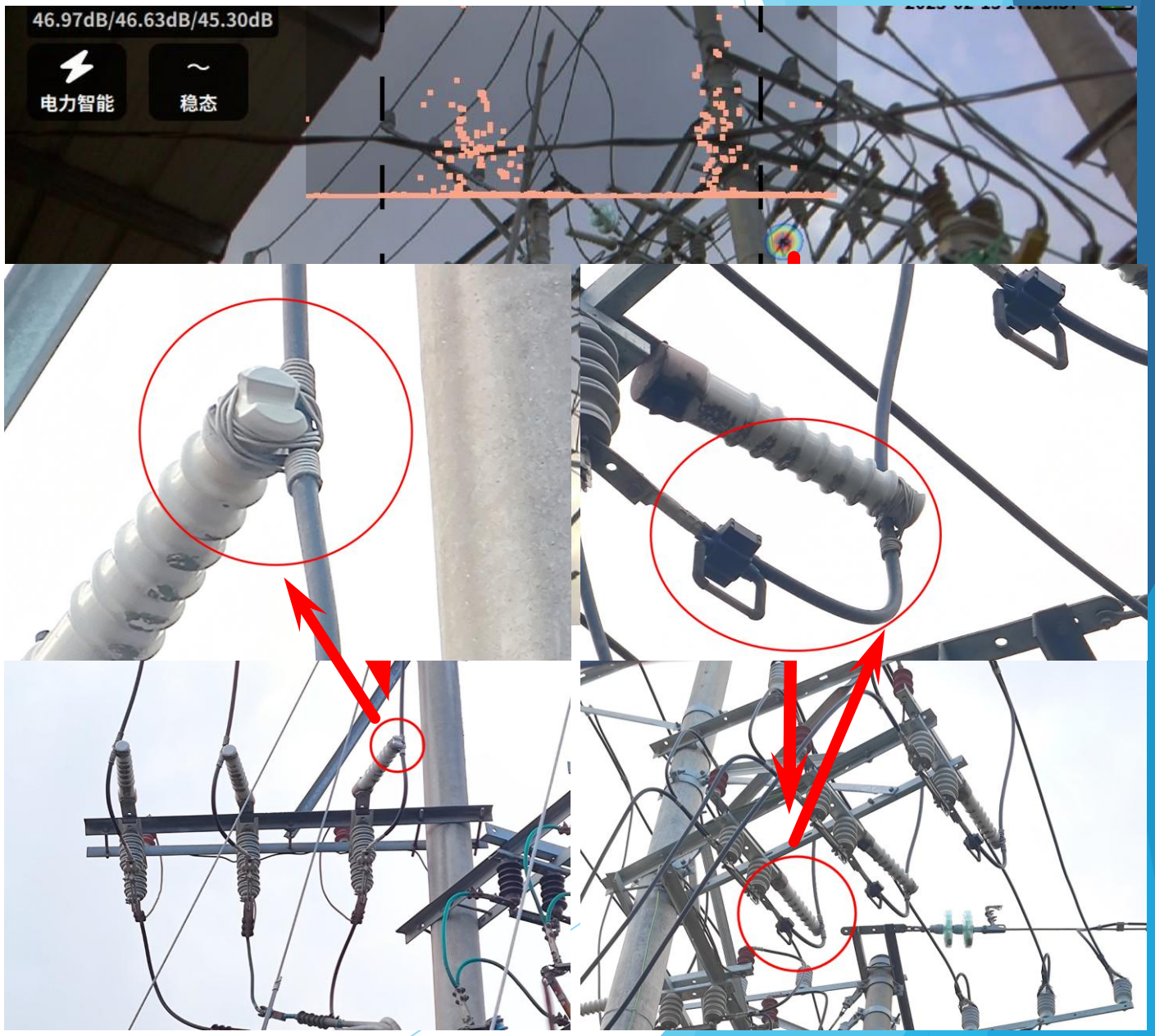
PD20

Field Applications

Area: 10kV Pole Tower Cluster

Scenario: Multi-point localisation

In the daily inspection, the test found that the C-phase isolation knife gate on the policy-type porcelain vase and conductor connection and the C-phase isolation knife gate rear wire clamps generated discharge; the scene detected a clear discharge signal. Positioning points and discharge location, as shown in the correct figure, measured ultrasonic maximum magnitude values of 46.97dB and 45.30dB, belonging to the severe defects; through the observation of the scene, it found that the AC phase insulated wires in the above position appears to be crossed, resulting in the position of the occurrence of abnormal local discharge phenomenon.



PD20 Ex

Field Applications

Area: Taizhou, Zhejiang

Scenario: A pharmaceutical chemical plant - compressed air leakage

During routine inspections, gas leaks were found in the piping connection flanges and piping valves in the compressed air area of the pharmaceutical and chemical plant. Subsequently, through the inspection, personnel sprayed soapy water further to verify the existence of an apparent gas leakage phenomenon.





PD20 IR

Field Applications

Area: Henan

Scenario: Insulator local discharge with abnormal heating

In the daily inspection, the test found that the 10kV transformer above the C-phase falling fuse next to the porcelain vase had an abnormal sound source point; the scene detected an unmistakable discharge signal. As shown above, positioning points and discharge location measured an ultrasonic maximum value of 36.95 dB. After careful observation of the high-definition camera, we found that the C-phase vase is damaged (the vase itself has obvious cracks); with the use of infrared imaging mode detection, a significant heating phenomenon also accompanies the vase, the current point of continuous tracking, plans to carry out repairs in the next planned power outage.



PD30 DR

Field Applications

Region: Guangxi

Scenario: 10kV distribution line

For users in the 10kV overhead line for daily inspection, 10kV overhead line porcelain bottle and line clamp position, there is a local discharge problem. Defects in the location and the forest are dense, personnel through the arrival of more difficult, the use of drones equipped with acoustic imaging module for local discharge detection, the effect is obvious and easy to use. Currently, the point of continuous tracking is planned for maintenance in the next planned power outage.











PD10 OS

Field Applications

Region: Jiangsu

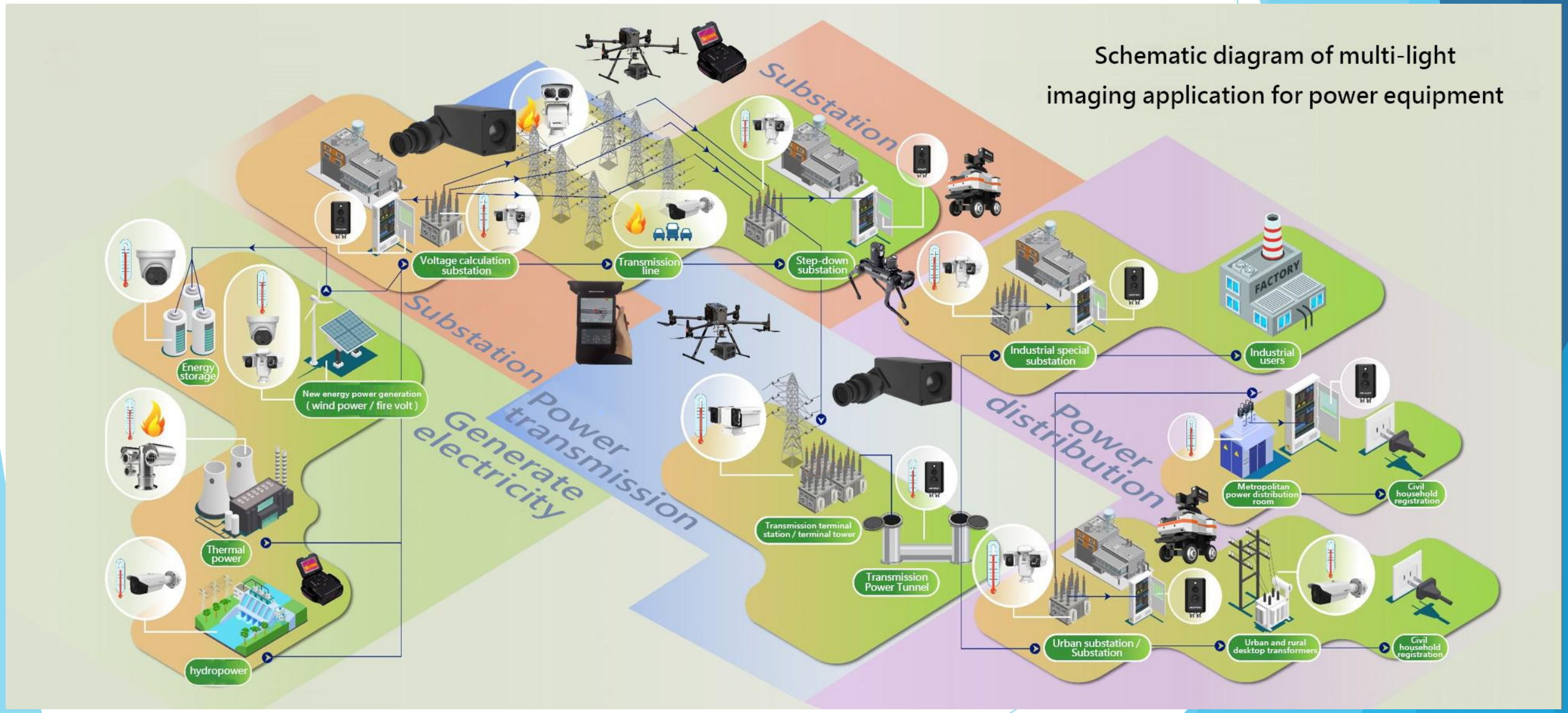
Scene: High and low voltage distribution room



The user installs a set of acoustic imaging online monitoring systems in the high and low-voltage distribution room and uses the acoustic imaging online monitoring device to find that there are apparent localisation points in the bus room of the 10kV switchgear cabinet. The background data is automatically analysed as an unmistakable local discharge signal. The positioning point and discharge location are shown in the figure, and the maximum ultrasonic value of 41.6 dB was measured. The point is now being continuously tracked and is scheduled to be repaired during the next planned outage.



Application Scenarios



IR Temperature Measurement

IR Thermal Gun



BT-61
(32 ~ 42.9°C / 89.6 ~ 109.2°F)



BT-62
(-50 ~ +460°C / -58 ~ +860°F)



BT-63
(-60~550°C / -76~1022°F)



BT-64
(-60 ~ +1000°C / -76 ~ +1832°F)



BT-65
(-35 to 1600°C / -31 to 2912°F)



BT-66
(100 to 2000°C / 212 to 3632°F)

BT-61

Forehead thermometer for fever (32 ~ 42.9°C / 89.6 ~ 109.2°F)
Object surface thermometer (0 ~ 200.0°C / 32.0 ~ 392.0°F)



During the COVID-19 period: schools, businesses, social communities and health care settings screened visitors for fever. A remote thermometer is commonly used, which doesn't require skin contact and allows people to remain further apart to comply with the hygiene measure. Remote thermometers are used on the forehead (temporal artery) to serve well the purpose of ensuring our health safety.

Remote forehead thermometers use an infrared scanner to measure the temperature of the temporal artery in the forehead. It can record a person's temperature quickly and is easily tolerated. The BT-61 IR Forehead thermometers are appropriate for children to adults of any age.

BT-61

The BT-61 is a Forehead Thermometer for Fever; it is also good to measure Object surface. This Infrared forehead thermometer is equipped with a unique microchip and a sensitivity sensor to benefit the users:

1/ Fast & safe: Its Infrared sensor can precisely detect the infrared heat given off by the forehead and quickly measure to get the reading in 1 second for measurements in °C or °F at your fingertip.

2/ Engineered technology: The non-contact infrared mechanism is employed to minimise the software program errors by using sound and light engineering design processes, risk analysis and software validation.

3/ No touch forehead: The measuring distance between the thermometer and the forehead must be 2-10 cm. The non-contact thermometer is more convenient than the standard thermometer and touch thermometer.

4/ 32 readings memory storage: The BT-61 can memorise 32 readings to track your family member's temperature continually.

5/ Multiple measurement modes: The BT-61 can measure not only body temperature but also the temperature of objects in a wide range for domestic applications.

BT-61

The BT-61 is the junior member of the BT-60 series- A professional Infrared thermometer & imager for stringent requirements for industry use. All the models are dedicated to intelligent applications and are designed to comply with international regulations. Even the junior model BT-61 is CE (Europe), UKCA (UK), FDA (USA), and CFDA (China) approved to fulfil the complete confidence of consumers.

Features:

- Forehead & Object Surface Types
- Forehead Temperature For Fever
  (32 ~ 42.9°C / 89.6 ~ 109.2°F)
  Object surface thermometer
  (0 ~ 200.0°C / 32.0 ~ 392.0°F)
- Accuracy / Body Temperature Mode:
  With range 35.0°C ~ 42.0°C: ± 0.2°C
  Accuracy / Object Temperature Mode:
  With range 0.0°C ~ 200.0°C: ± 0.4°C
- Easy To Use, 1 Second Fast Measurement
- Non-Contact To Comply Hygiene Measure
- Backlight Display
- Fever Guidance Colours Display (Green, Amber & Red)
- 32 Memories Recall
- 30 Sec. Automatic Sleep Mode
- Bilingual- English & Chinese
- Expertise Manufacturer In Thermal Equipment to Ensure Consumers' Confidence
- CE (Europe), UKCA (UK), FDA (USA), and CFDA (China) Safety.

BT-61

TECHNICAL SPECIFICATIONS	
Description	Infrared Thermometer Forehead & Object surface types
Measuring Range	Body Temperature 32.0 ~ 42.9°C (89.6 ~ 109.2F°F) Object surface Temperature 0.0 ~ 200.0°C (32.0 ~ 392.0°F)
Accuracy in °C / Body Temperature Mode	Within range 35.0 °C ~ 42.0 °C : ± 0.2 °C Out of range (2 ~ 10 cm) 35.0 °C ~ 42.0 °C : ± 0.3 °C
Accuracy in °C / Object Temperature Mode	Within range 0.0 °C ~ 200.0 °C : ± 0.4 °C Out of range (2 ~ 10 cm) 0.0 °C ~ 200.0 °C : ± 0.6 °C
Memories	32 Recalls (Forehead type only)
Measuring Distance	2 ~ 10 cm
Atmospheric Pressure	70 kpa ~ 106 kpa
Indicating Unit Resolution	0.1 °C
Operating Temperature	10 °C ~ 40 °C
Automatic Sleep Mode	After 30 Sec.
Language	Bilingual- English & Chinese (Default English)
Battery	6F22 9V (Alkaline battery recommended)
Product Size (L x W x H)	10 cm x 4.6 cm x 16 cm
Product Weight	125g (Without Battery)



Normal
Green backlight 34~37.3 °C



High
Amber backlight 37.4~38 °C



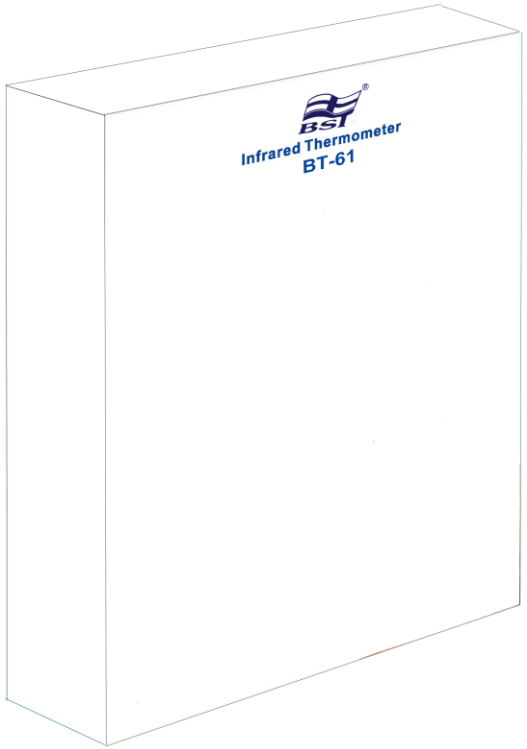
Fever
Red backlight 38.1~42.9 °C

Functional Information

1. Infrared Sensor
2. Measuring Port
3. LCD Screen
4. "Body Temp (Default) or Object Temp (Blank) mode"
5. Buzzer
6. Backlight
7. °C / °F
8. "+" Button
9. "-" Button
10. "M" Function enable Button
11. Backlight Button
12. Buzzer Button
13. Measuring Button
14. Battery Cover
15. Handle



BT-61



White Box

One set includes:

Forehead thermometer
DC9V Battery
Operation Manual
Packing Box

Product size:
10(L) x 4.6(W) x 16(H) cm

Packing white box size:
13.5(L) x 5.2(W) x 18.5(H) cm

Product Weight:
125g (Without Battery)

Outer Carton: (40 pcs. Pack)
50.0(L) x 37.2(W) x 24.5(H) cm

Carton Gross Weight:
9.1 ± 1Kg.

BT-62

Infrared Thermometer (-50 to +460°C / -58 to +860°F)



BT-62 is an infrared thermometer with laser and backlight for easier targeting and operating. The good temperature range, real-time maximum reading, and reasonable price make this thermometer the runner-up seller.

BT-62 is Ideal for isolating overheated electrical components and hot spots, troubleshooting HVAC/R and automotive systems, or performance-testing motors and boilers. It is also handy for monitoring domestic food temperature and measuring your fridge temperature. Varied applications included cooking, barbequing, home repairs, auto maintenance, etc.

Features:

- Compact and Portable
- Wide Temperature Range -50 to +460 °C (-58 to +860°F)
- 8 Laser Beams
- Large LCD Screen with Bright Blue Backlight
- Last Reading Recall
- Auto Power Off: 15 Sec
- CE & UKCA complied
- Fast Response Time: Approx. 1 Sec.
- Interchangeable Between °C & °F
- 12:1, Distance to Spot Ratio
- Max Temperature Reading Display
- Battery Low Display
- User-Friendly Interface

BT-62

FEATURES OVERVIEW

8 Beam Laser Pointer



Last Reading Recall



Comfortable Ergonomic Handle



Bright Blue Backlight





AUTOMOTIVE



HVAC



DIY

BT-62

TECHNICAL SPECIFICATIONS	
Description	Infrared Thermometer (Gun Type) with 8 Beam Laser Pointer
Measuring Range	-50 ~ +460°C (-58 ~ +860°F)
Operating Range	0 ~ 50°C (32 ~ 122°F)
Accuracy, Tobj= 15 ~ 35oC, Tamb= 25oC	Tobj= 0 ~ 460°C: ±2.5% of reading or 2.5°C (4.5°F) whichever is greater Tobj= -50 ~ 0°C: ±(2.5°C + 0.05/°C)
Emissivity Range	0.95 Fixed
Resolution	0.2°C / 0.5°F at -9.9 ~ +199.9 (°C / °F), otherwise 1°C / 1°F
Response Time (90%)	1 sec
Distance: Spot	12:1
Mode	Max
Power Supply	AAA x 2pcs (Alkaline battery)
Battery Life	Typ.18 hours, minimum14 hours continuous use (with laser & backlight which is default set fixed ON)
Dimensions	114 x 162 x 40 mm (4.5 x 6.4 x 1.6 inch)
Weight	~180 g (6.3 oz.), including batteries (AAA x 2pcs)





Blister

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
Blister with inlay card
COC (optional)
Bead (optional)

---

30 sets / master carton size:
490 x 255 x 435 mm (1.91 cube ft)
N.W: 7.32kgs
G.W: 8.32kgs

White Box

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
White Box (PP tray)
COC (optional)

---

40 sets / master carton
Master carton size:
490 x 450 x 380 mm (2.95 cube ft)
N.W: 12.0kgs
G.W: 13.0kgs

BT-63

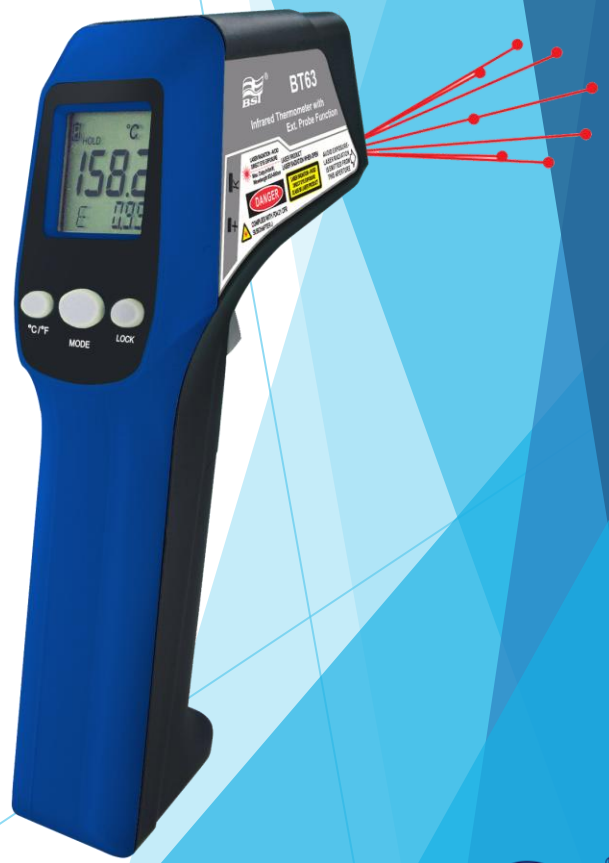
Infrared Thermometer for Automotive/HVAC (-60~550°C / -76~1022°F)

BT-63 is a gun-type infrared thermometer with laser and backlight for easier targeting and operating. The good temperature range with real-time maximum reading makes the BT63 the ideal tool for various applications.

An automotive infrared thermometer is one of the most exciting and valuable applications of an infrared thermometer gun, such as the BT-62/63/64. Use the temperature gun to troubleshoot, diagnose and perform routine spot-checking of car system performance for brakes to radiators, HVAC system, and engine timing. Besides, it can also help with industry and domestic usage.

Below is a quick summary of how you can use an infrared thermometer for automotive diagnostics:

- Measure coolant temperatures at the close end of the return line
- Test for blockages in a radiator
- Measure belt and pulley temperatures
- Diagnose cylinder misfires by scanning the exhaust manifold
- Test the HVAC system by measuring temperatures of inlets, outlets, supply lines, output vents and condenser outlets, supply lines, output vents
- Detect excessive heat in brake components
- Evaluate the heat dispersal dynamics of the brake system
- Monitor tire temperature on long trips to avoid blowouts



BT-63

Features:

- Versatility: Automotive, HVAC, HACCP, Power, Industry, laboratory

- Measurement Range: -60~550°C(-76~1022°F)

- Full Range Accuracy: ≥0°C: ±2% of reading or 2°C(4°F) whichever is greater <0°C: ±(2°C + 0.05/°C)°C

- Distance to Spot: 12 : 1

- Recall the Last Reading

- Built-in K Thermocouple Socket

- Large LCD Screen, with Bright Amber Color Backlight

- Auto Power Off: 15 Seconds

- User-Friendly Interface

- CE & UKCA complied



8 Beam Laser Pointer

External K-type Thermocouple Support





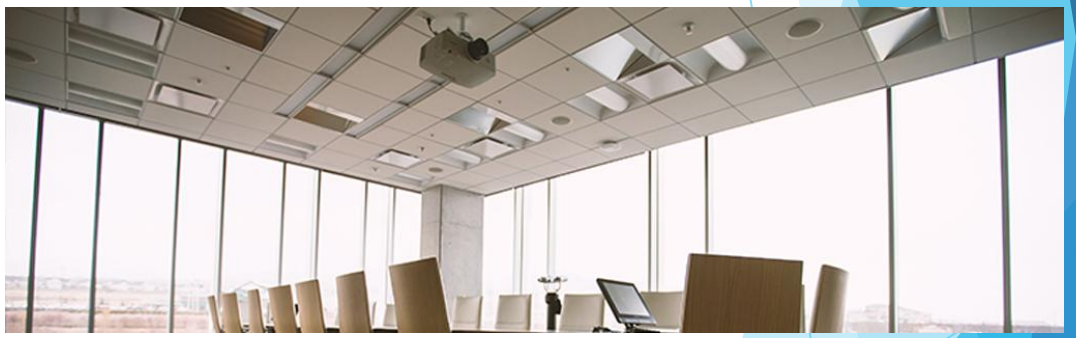
Bright Amber Colour Backlight

BT-63

AUTOMOTIVE



HVAC



ENGINE TIMING



BT-63

TECHNICAL SPECIFICATIONS	
Description	IRT + Laser + Thermocouple socket
Measurement Range	-60 ~ +550°C (-76 ~ +1022°F)
Measurement Range#	-64 ~ +1400°C (-83.2 ~ +2552°F) with Thermocouple
Operating Range	0 ~ 50°C (32 ~ 122°F)
Accuracy, Tobj=15 ~ 35°C, Tamb=25°C	±1.5°C (2.7°F)
Accuracy, Tamb=23±3°C	Tobj= 0 ~ 550°C: ±2% of reading or 2°C (4°F) whichever is greater, Tobj= -50 ~ 0°C: ±(2.5°C + 0.05/°C)
External Probe Accuracy, Tamb=23±6°C#	±1% of Reading or 1oC (1.8°F), whichever is greater
Emissivity Range	0.95 default, adjustable from 0.1 to 1 step .01
Resolution	0.1°C / 0.1°F at -83.2 ~ +999.9 (°C / °F), Otherwise 1°C / 1°F
Response Time (90%)	1sec
Distance: Spot	12:1
Mode	Ave, Dif., Hi / Low Alarm, Real-Time Max / Min, Lock
Power Supply	AAA x 2pcs (Alkaline battery)
Battery Life	Typical 18 hours, minimum 14 hours continuous use (WITH laser and backlight) Typical 180 hours, minimum 140 hours continuous use (WITHOUT laser and backlight) *Laser & Backlight are ON/OFF selectable
Laser	Class IIIa Laser
Dimensions	153 x 114 x 48 mm (6 x 4.5 x 2 inch)
Weight	~180 g (6.3 oz.), including batteries (AAA x 2pcs)
Thermocouple Probe	K Type Thermocouple socket (K probe not included)

#Actual temperature range depends on the Thermocouple probe selected



Blister

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
COC (optional)
Blister
Bead (optional)

---

30 sets / master carton
Master carton size:
517 x 310 x 454 mm (2.56 cube ft)
N.W: 7.5kgs
G.W: 9.0kgs



White Box

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
White Box (PP tray)
COC (optional)

---

40 sets / master carton
Master carton size:
490 x 450 x 380 mm (2.95 cube ft)
N.W: 12.0kgs
G.W: 13.0kgs

BT-64

Infrared Thermometer for HVAC & Construction (-60 ~ +1000°C / -76 ~ +1832°F)



BT-64 Infrared thermometer is the ultimate tool for temperature measurements. It contains two most reliable temperature sensors:

1) Non-contact Micro Machining mechanism

2) K-type thermocouple socket (K probe is optional)

Such an arrangement can fulfil most temperature measurement requirements:

Use the Non-contact for an instant; not-reachable situation.

Use the thermocouple for high precision; in the non-surface case.

BT-64 Thermometer comes with ultra-long battery life (8days for an alkaline battery), thanks to our "Low Voltage Technology" is introduced below. The BT series thermometers use only the most affordable and available AAA size battery.

Emissivity with the Thermometer:

Emissivity is difficult for general users to catch; it's easy to get for thermometers. Use the contact thermometer to get the accurate temperature. Then, use the Non-contact to reach the surface temperature. Adjust the Emissivity until they are the same. Thus, the memorized Emissivity for that object will remain for future usage. There is no more guessing or looking upon the Emissivity Table.

BT-64

BST Technology

Low Voltage Technology

Thanks to our power-saving technology. The BST IR Thermometers operate with a 3 Volt power supply, while many other traditional IR products require a 9 Volt supply. The BST IR thermometers use 3 Volt alkaline AA batteries, which provide continuously 8 days of operation.

Thermal Shock Immunity

BST IR Thermometers can withstand a thermal shock of 10°C /18°F. (Please refer to the standardized test method described in EN12470, Paragraph 7.6.) Our products are good at maintaining accuracy under widely changing environmental conditions. For example, the errors from environmental changes in traditional Infrared products require almost 30 minutes to reach a 1.6°C temperature difference. While with BST thermometers, we need about 7 to 10 minutes only.

Features:

- Versatility: Automotive, HVAC, Power plant, Industry
- THB (Thermal Bridge Detection)
  DPT (Dew Point Temp.)
- Wide Measurement Range: -60 to +1000°C
  (-76 to +1832°F)
- High DS (Distance to Spot) Ratio up to 30:1
- Laser sight technology for better targeting; multi-beam laser
- Colour bar graph displays
- Built-in K Thermocouple Socket
- Tripod mounted
- AAA x 2 battery
- CE & UKCA complied

BT-64

THB
(Thermal Bridge Detection)



DPT
(Dew Point Temp)



8 Beam Laser



RH Sensor



RH
(Relative Humidity)



Colour Bar Display



External K-type Thermocouple
Support



Tripod Mount

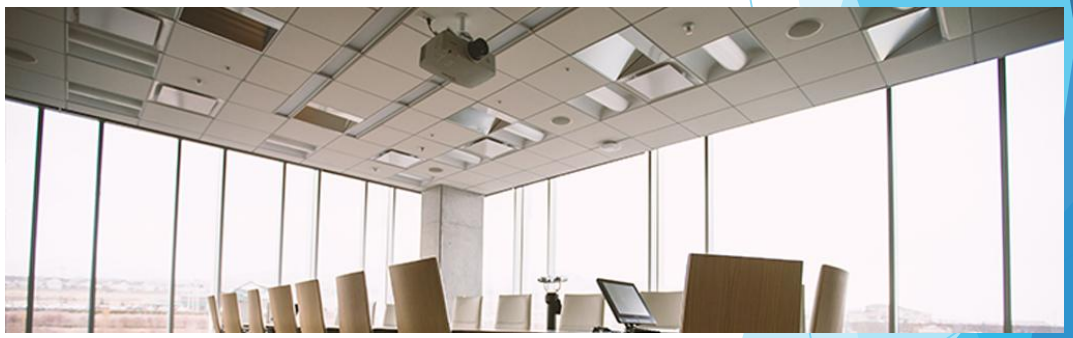


BT-64

INDUSTRY



HVAC



DIY



BT-64

TECHNICAL SPECIFICATIONS

Description	IRT + Laser + Thermocouple Socket + Color Bar Display + THB + DPT + RH
Measurement Range	-60 ~ +1000°C (-76 ~ +1832°F)
Measurement Range#	-64 ~ +1400°C (-83.2 ~ +2552°F) with Thermocouple
Operating Range	0 ~ 50°C (32 ~ 122°F)
Accuracy, Tobj=15 ~ 35°C, Tamb=25°C	±1.0°C (1.8°F)
Accuracy, Tamb=23±3°C	Tobj= 0 ~ 1000°C: ±2% of reading or 2°C (4°F) whichever is greater, Tobj= -60 ~ 0°C: ±(2°C + 0.05/°C)
External Probe Accuracy, Tamb=23±6°C#	±1% of reading or 1°C (1.8°F), whichever is greater
Emissivity Range	0.95 default, adjustable from 0.1 to 1 step .01
Resolution	0.1°C / 0.1°F at -83.2 ~ +999.9 (°C / °F), Otherwise 1°C / 1°F
Response Time (90%)	1sec
Distance: Spot	30:1 (90% energy covered)
Internal Memory	Detailed 50 Memories with Temperature & Emissivity
Relative Humidity (Tamb=23±5°C)	1~99%, accuracy: ±3% from 20~80%, otherwise ±5%
Dry Bulb Temperature	-20 ~ +65°C, accuracy: ±2.5°C
Wet Bulb Temperature	-20 ~ +65°C, accuracy: ±2.5°C
Dew Point Temperature (DPT)	-50 ~ +50°C, accuracy: ±2.5°C from 20~30%RH; ±2°C from 31~40%RH; ±1.5°C from 41~95 %RH
Power Supply	AAA x 2pcs (Alkaline battery)
Battery Life (Alkaline)	Typical 8 hours, minimum 7 hours continuous use (with laser and backlight) Typical 32 hours, minimum 30 hours continuous use (with backlight only) *Backlight is default set fixed ON/Laser is selectable ON/OFF
Laser	Class IIIa Laser
Dimensions	53 x 124 x 171 mm (2.1 x 4.9 x 6.7 inch)
Weight	~240 g (8.5 oz.), including batteries

#Actual temperature range depends on the Thermocouple probe selected



Blister

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
COC (optional)
Blister with inlay card

---

20 sets / master carton
Master carton size:
582 x 438 x 334 mm (3.0 cube ft)
N.W: 6.7kgs
G.W: 8.8kgs



White Box

One set includes:
Infrared thermometer
2 AAA batteries
1 User manual
White Box (PP tray)
COC (optional)

---

30 sets / master carton
Master carton size:
531 x 365 x 440 mm (3.0 cube ft)
N.W: 11.85kgs
G.W: 13.09kgs

BT-65 (-35 to 1600°C / -31 to 2912°F)

BT-66 (100 to 2000°C / 212 to 3632°F)

Professional dual Laser Infrared Thermometer for HVAC & Automotive applications





While a thermometer is hardly the most exciting device, it's essential to our lives. They are commonly used to take temperatures – and in the field of HVAC, temperature control is all-important.

As little as 1°C could represent a considerable change in equipment status and compliance with regulations, such as the proper temperature at which a supermarket must store meat. Precision is essential and matters to our well-being.

Accurate temperature measurements are essential for reading air differences, superheat, and subcooling. HVAC thermometers are most commonly used to measure air, water, refrigerant, and copper lines' temperatures, and these measurements are vital to locating the source of potential hazards or defects.

BT-65/66 professional thermometer gun is ideal for troubleshooting, diagnosing, and performing routine spot-checking of car system performance for brakes to radiators, HVAC system, and engine timing.

BT-65 (-35 to 1600°C / -31 to 2912°F)
BT-66 (100 to 2000°C / 212 to 3632°F)

Let's see how the BT-65 & BT-66 infrared thermometers help automotive diagnostics:

Coolant Temperatures

Measure coolant temperatures at the close end of the return line before entering the radiator.

Radiator blockage

Help test the radiator's suspected blockage points before it shuts the system down. It will only be a few moments before the thermometer helps the entire radiator back to a uniform temperature.

Cylinders, Misfires, and Engine Performance

When checking overall engine performance or looking to identify 'hot spots,' use the dual laser thermometer to read belt and pulley temperatures. Engine design, exhaust manifold material and direction of exhaust flow (and therefore, heat) all play a role in successfully using an automotive infrared thermometer.

When diagnosing cylinder misfires, the primary factor will be the design of the exhaust manifold and its relative position with the cylinders.

Cast iron exhaust manifolds distribute heat evenly across the entire area. Due to this, it is nearly impossible to measure individual cylinder temperatures accurately.

The newer thin-walled exhaust manifolds produce better temperature gun measurements of nearby cylinders and components of the electrical system.

BT-65 (-35 to 1600°C / -31 to 2912°F)
BT-66 (100 to 2000°C / 212 to 3632°F)

Heating and Cooling Systems

The dual laser thermometer BT-65/66 can test an HVAC system (heating-ventilation-air conditioning) through the inlet and outlet points along the supply lines. The BT-65/66 can also monitor the re-charging of the air conditioning system to avoid over-charging.

Use the scan feature of the BT-65/66 to watch for a sudden rise in the system's output. You can find the moment of the total charge of the system. Use the thermometer to thoroughly diagnose the entire system to test the output vents along all lines at the condenser. You can also identify whether heating system failures are due to coolant circulation or blend door issues.

Brake Systems

The BT-65/66 can provide invaluable data for measuring the brake system.
Remember that you should take temperature readings for all four wheels. It is vital to provide enough data to know that brakes operate efficiently side-to-side. It can also provide information on the front and rear braking systems.

Excessive heat can indicate excessively worn pads, disks and misalignment of these components.

When you use an infrared thermometer for diagnosing your car, make sure it is a quality instrument. It should be something you can rely on and have confidence in. A quality thermometer has features for scanning, minimum, maximum and average temperature tracking, and dual lasers for precise targeting of the measurement area. Your device should also allow you to adjust the emissivity to enable more accurate measurements of metal surfaces, such as brake discs, engine blocks, or catalytic converter components.

BT-65 (-35 to 1600°C / -31 to 2912°F)
BT-66 (100 to 2000°C / 212 to 3632°F)

Features:

- Versatility: HVAC, Automotive, Construction, Power plant, industry

- Wide Measurement Range:
  BT-65 (-35 to 1600°C / -31 to 2912°F)
  BT-66 (100 to 2000°C / 212 to 3632°F)

- High DS (Distance to Spot) Ratio: BT-65 60:1
  BT-66 75:1

- Laser Sight Technology for Better Targeting; Dual Laser

- Colour Bar Displays Temperature in Max / Min Mode

- Backlight & Memory Mode

- Built-in K Thermocouple Socket

- Rugged Casing with 2M Drop Proof

- Ergonomic Handle with Rubber Boot

- Tripod Mounted

- AA x 2 Battery

- CE & UKCA complied

BT-65 (-35 to 1600°C / -31 to 2912°F)
BT-66 (100 to 2000°C / 212 to 3632°F)

USB Function / SD Card



Built-in K type Thermocouple socket



Rugged casing with 2M drop proof



Ergonomic Handle (Rubber Boot)

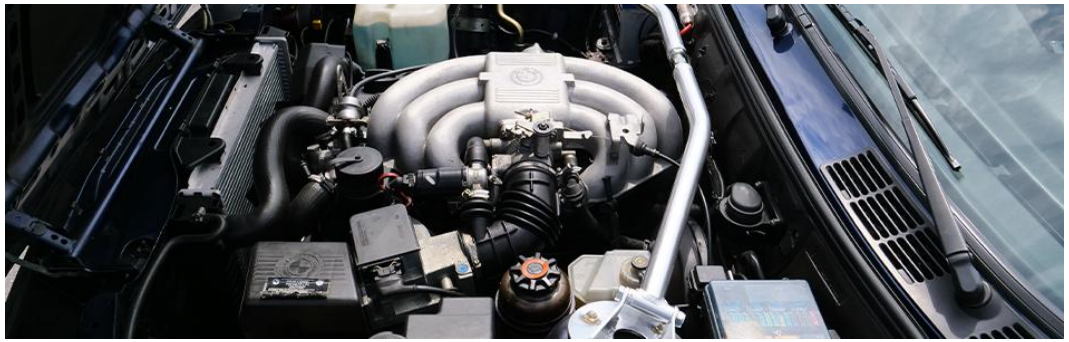


Colour Bar Display With Backlight



BT-65 (-35 to 1600°C / -31 to 2912°F)
BT-66 (100 to 2000°C / 212 to 3632°F)

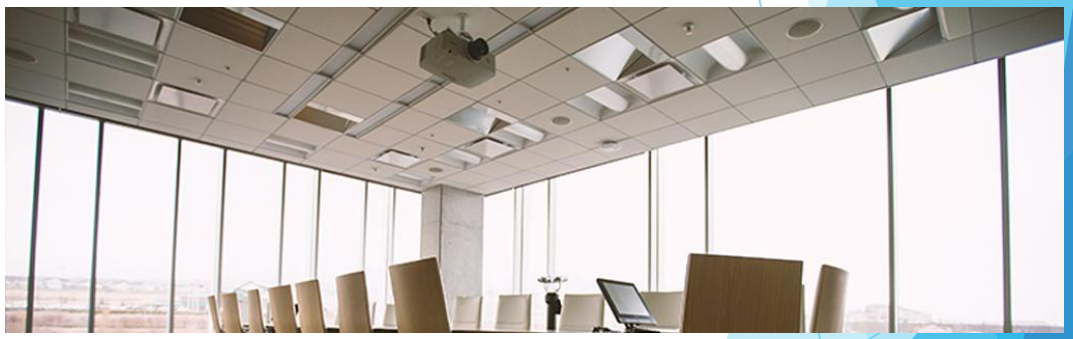
AUTOMOTIVE



INDUSTRY



HVAC



BT-65 (-35 to 1600°C / -31 to 2912°F)

BT-66 (100 to 2000°C / 212 to 3632°F)

TECHNICAL SPECIFICATIONS

MODEL	BT-65	BT-66
Description	IRT + Laser + Thermocouple Socket, with USB Function, with SD Card Storage, with Color Bar Display	
Measurement Range	-35 ~ +1600°C (-31 ~ +2912°F)	100 ~ 2000oC (212 ~ 3632oF)
Measurement Range# (Thermocouple)	-64 ~ +1400oC (-83.2 ~ +2552oF)	-64 ~ +1400oC (-83.2 ~ +2552oF)
Operating Range	0 ~ 50°C (32 ~ 122°F)	
Accuracy, Tamb=23±3°C	Tobj= 0 ~ 1600oC: ±2% of reading or 2oC (4oF) whichever is greater, Tobj= -35 ~ 0oC: ±(2oC + 0.05/oC)	±2% of reading
External Probe Accuracy, Tamb=23±6°C#	±1% of reading or 1°C (1.8°F), whichever is greater	
Emissivity Range	0.95 default, adjustable from 0.1 to 1 step .01	
Resolution	0.1°C / 0.1°F at -83.2 ~ +999.9 (°C / °F), Otherwise 1°C / 1°F	
Spectral Range	8~14µm	2.3µm
Response Time (90%)	1sec	
Distance: Spot	60:1 (90% energy covered)	75:1 (90% energy covered)
Internal Memory	Detailed 24 Memories with Temperature & Emissivity	
Mode	Max / Min, Diff, Avg, Lock, Hi / Low Temp Alarm	
Memory Type	Support Micro SD card (Recommend to use attached Micro SD card)	
Thermocouple Probe	K Type Thermocouple socket (K probe not included)	
Output Interface	USB, SD card	

#Actual temperature range depends on the Thermocouple probe selected



Tool Box

One set includes:
Infrared thermometer
2 AA batteries
1 User manual
Tool Box (with Tool Box label)
Micro SDHC memory card
Mini USB cable
Application CD
Bead (optional)
Probe (optional)
COC (optional)

---

20 sets / master carton
Master carton size:
540 x 370 x 340 mm (2.35 cube ft)
N.W: 8.25kgs
G.W: 9.375kgs

IR Temperature Measurement

IR Thermal Imaging Camera



BT-71
(-20 ~ +350℃ / -4 ~ +662℉)



BT-72
(-20 ~ +500℃ / -4 ~ +932℉)

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)
Infrared Thermal Imager Camera

Thermal Imaging - HVAC & Building Services Diagnostic Maintenance:

Thermal imager applications in the HVAC industry are broad. A technician must check through walls, pipes, and electrical or mechanical systems. An Infrared Thermal imager can help identify thermal patterns of an object's surface to identify leaking pipes, mould formation, mechanical failures, deteriorating electrical components, and inadequate insulation airflow distribution. You can even use a thermal imager to provide energy advice by detecting heating and cooling losses.

Thermal Imagers are gaining in popularity as the technology, portability, and compact designs of the devices improve, making them more cost-competitive and an ideal choice as a helping tool. Thermal imaging cameras render infrared radiation, or heat, as visible light to precisely measure the surface temperature of an object. This infrared energy is a light wavelength undetected by the human eye and allows you to see heat patterns emanating from the object in different colours; the higher the temperature, the greater the infrared radiation emitted. The slightest temperature sensitivities can signal a fatigued or overheated fan motor, condenser or evaporate coils, control valves, and any other component that might not otherwise notice.

HVAC professionals focus on installing, performing, and maintaining residential and commercial heating and cooling systems. They can think of the thermal imager as a helping hand, a tool that complements their know-how to inspect, troubleshoot, and prevent problems before they ever happen.

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)



Features:

- Versatility: HVAC, Power Plant, Automotive, Solar System

- Wide Measurement Range:
  BT-71 (-20 to 350°C / -4 to 662°F)
  BT-72 (-20 to 500°C / -4 to 932°F)

- Thermal Image Resolution: BT-71 (32 x 32)
  BT-72 (160 x 120)

- Fusion / Visual (Photo/Video Mode) <BT-71>
-
- Fusion / Visual / Thermal (Photo/Video Mode) <BT-72>
  -
- Fine Adjustment: The Blending Area of Visual & Thermal Images <BT-72>

- Fully Automatic Measurement

- Outstanding Measurement / Accuracy/ Focus Free

- Automatically / Manually Power Off

- Micro SD Card Storage

- 3.7V Li-ion Rechargeable Battery

- IP54 Splash Proof Classification

- CE & UKCA complied

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

Let's see how the BT-71 & BT-72 infrared thermal imager cameras help HVAC diagnostics:

Detect Water Leaks

An HVAC technician used a thermal imager to find water-related problems that a regular inspection might not be able to discover. Improperly insulated ducting that hasn't been correctly sealed, wet from condensation, dripping in attics and crawlspaces. Thermal imagers scan temperature changes to help check for leaking pipes and tubes and locate drainage concerns and concealed drip leaks inside heating and cooling systems.

Locate Mold Formation

A problem that coincides with water leakage is mould. Once condensation occurs, mould forms in these locations where the leakage occurred, causing health concerns for a home or building's occupants. Thermal imagers use the externally determined ambient temperature and humidity and the measured surface temperature to calculate each measuring point's relative surface moisture value. Thermal imagers make it possible for HVAC technicians to pinpoint and prevent mould at an early stage.

Predict Electrical and Mechanical Failures

Thermal imaging technology is precious in predicting and preventing electrical and mechanical application failures in HVAC systems before they happen. Using the IRT technology, technicians can evaluate the heat status of low, medium and high voltage systems to detect defective components and connections, prevent unexpected outages, and reduce the risk of costly downtime. In addition, thermal imagers can prevent system damage by detecting heat emissions from mechanical components, indicating an elevated stress level on the system caused by friction, faulty alignment, component tolerances, or a lack of lubricant.

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

Monitor Airflow

HVAC professionals also find thermal imagers helpful in monitoring air circulation and determining air leakage and temperature distribution issues. Thermal imaging provides a broader system scan by assessing the heat transfer from the surface temperature and invaluable information that the human eye cannot process.

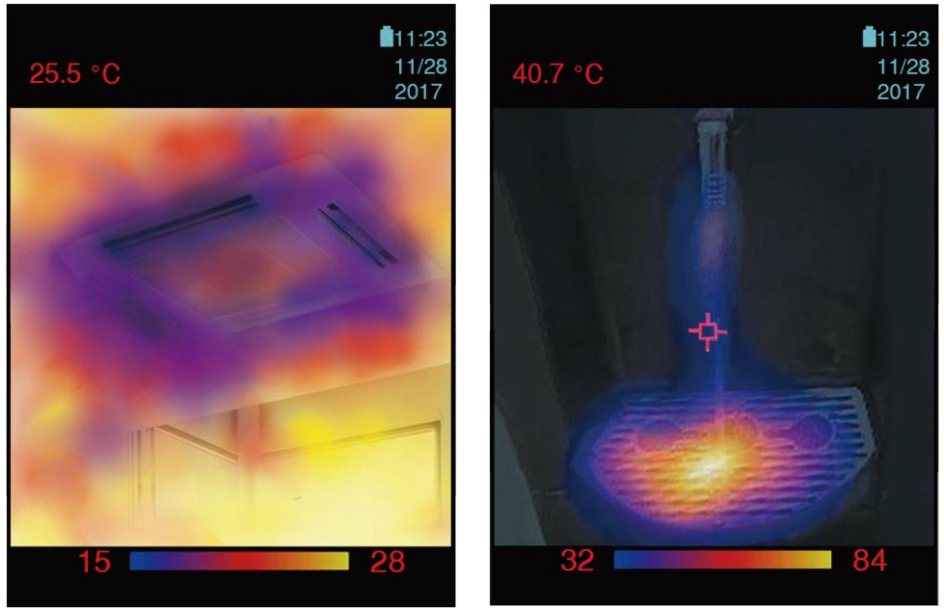
Control Energy Costs

Leaky ductwork can cause 20 - 40% of heating and cooling energy. Thermal imaging can assist HVAC professionals in quickly and effectively evaluating energy losses of heating and cooling systems. With its high-temperature resolution and detailed images, thermal imagers can scan for airtightness and reveal problems like radiant heating failures, insufficient insulation and thermal bridges, and other energy loss through inefficient HVAC systems.

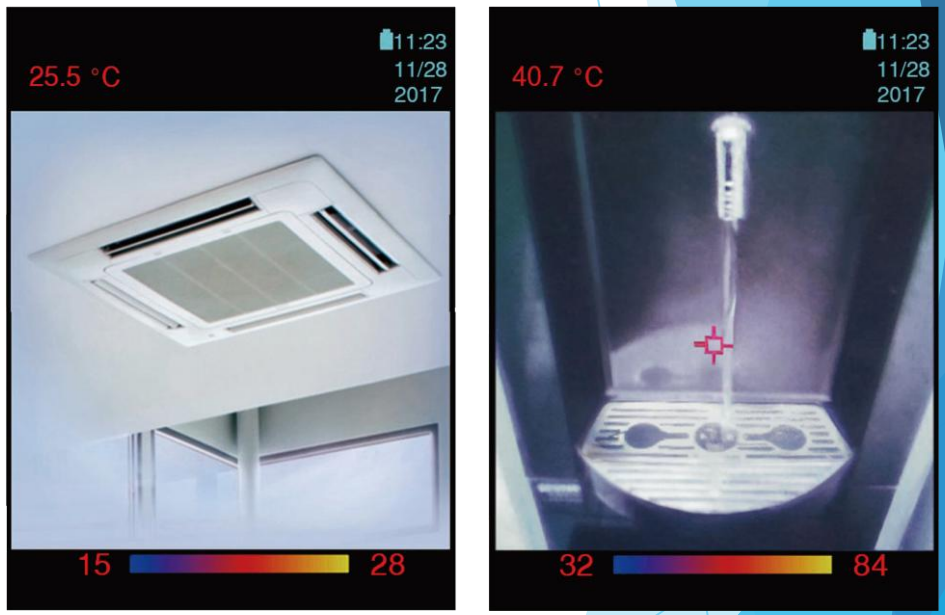
Today's advanced thermal technology benefits HVAC technicians in various practical applications. Thermal imagers like the BT-71 & BT-72, known for their excellent sensitivity and superior image quality, are easy to handle, ergonomically designed, and offer precise infrared images. The BT-72 has 160X120 high-resolution, so it sees detail on the object you are scanning, and you can detect irregularities and weaknesses from a farther distance. Conditions won't always present themselves to the naked eye. Still, with thermal imagers, you can perform an infrared assessment that will provide accurate, real-time information and prevent costly energy and money losses.

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

BT-71 Display Mode



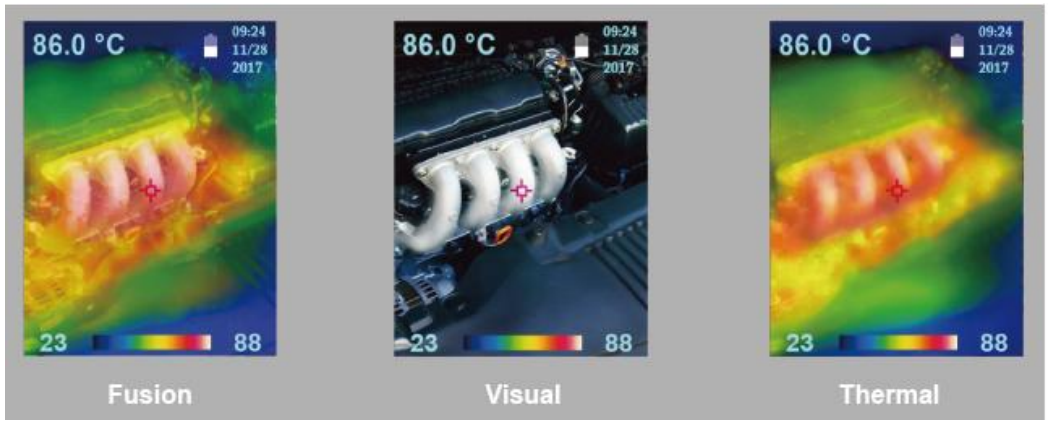
Fusion

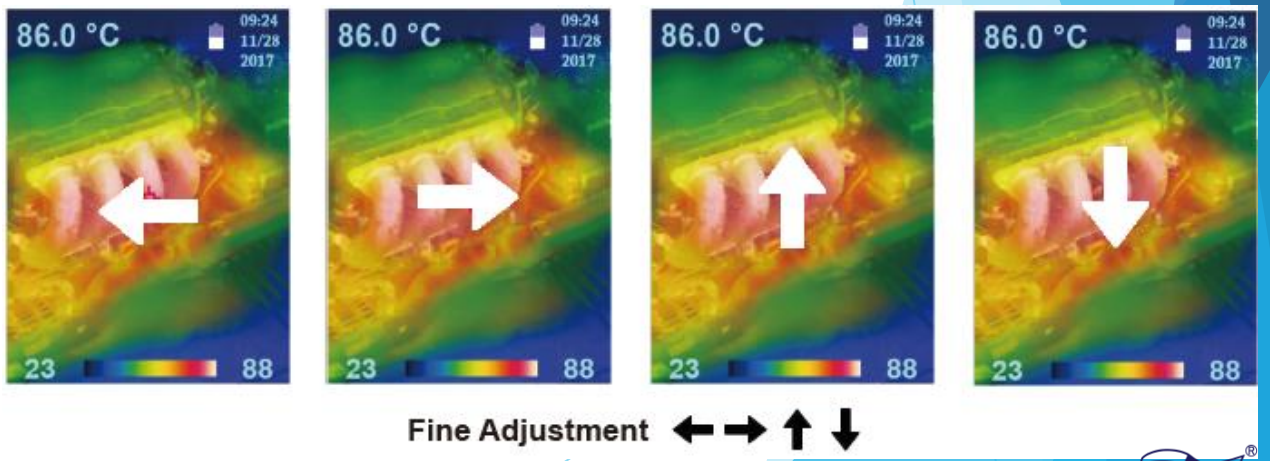


Visual

BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

BT-72 Display Mode





BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

AUTOMATION / PROCESS CONTROL

Spot check temperature of the equipment to avoid work downtime



BUILDING DIAGNOSTICS / OCCUPATIONAL SAFETY AND HEALTH

Check the pipes in the wall to prevent costly service



BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

ELECTRICAL / MECHANICAL

Temperature monitoring is an efficient way to predict potential equipment failure in substation.



SCIENCE / R&D

An infrared Thermal Imager Camera can help with a timely and accurate research mission



BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

SOLAR

Avoid any hot spots, as they are especially dangerous for the entire solar system. With the help of the Infrared Thermal Imager Camera, make sure the panels are not overheated or overloaded, which will lead to hot spot problems.



SCIENCE / R&D

Monitor HVAC components for quick energy audits and room balance in a short time. IR imagers can save time and money for the contractor. They perform diagnostics that were previously impossible without shutting down systems.



BT-71 (-20 to 350°C)
BT-72 (-200 to 500°C)

TECHNICAL SPECIFICATIONS

MODEL	BT-71	BT-72
Description	Thermal Imager Camera	
IP Classification	IP54	
Thermal Image Resolution	32 x 32	160 x 120
Visual Image Resolution	640 x 480	
Infrared Measurement Range	-20 ~ +350°C (-4 ~ +662°F)	-20 ~ +500°C (-4 ~ +932°F)
Infrared Accuracy (Tamb=20~26°C)	±2% of reading, or 2°C (4°F) whichever is greater	
Thermal Sensitivity	0.1°C (0.1°F)	
Frame rate	9Hz	
Spectral Range	33° x 33°	51° x 63.5°
Emissivity	0.95 default adjustable 0.1 to 1 step .01	
Focus	Focus free	
LCD (inch)	2.8	
LCD Type	Colour	
Visual Camera	●	
Alarm	●	
Image Storage	100,000 image for 16G Micro SD card, PNG format	
Memory Type	Support Micro SD card up to 32G (Recommend to use the attached 16G Micro SD card)	
LCD Type	8 ~ 14 um	
Interface	USB	

#Actual temperature range depends on the Thermocouple probe selected



Tool Box

One set includes:
Infrared thermometer
Li-Ion rechargeable battery
1 User manual
Tool Box
Micro SDHC memory card
Mini USB cable
Pouch(optional)

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5 sets / master carton
Master carton size:
530 x 370 x 340mm (2.35 cube ft)
N.W: 7.425kgs
G.W: 8.675kgs